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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|--------------------------|---------------------|------------------|
| 09/874,538 | 06/05/2001 | Rajankikant Jonnalagadda | H0001839 | 5236 |

7590 03/11/2003

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EXAMINER

LEO, LEONARD R

ART UNIT

PAPER NUMBER

3743

DATE MAILED: 03/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/874,538

Applicant(s)

JONNALAGADDA ET AL.

Examiner

Leonard R. Leo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8, 11-14 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 11-14 and 17-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 18, 2002 has been entered.

Claim 16 is cancelled, and claims 1-6, 8, 11-14 and 17-21 are pending.

Claim Objections

Claim 8 is objected to because of the following informalities: the recitation of "plate" in line 13 should be plural. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by

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"such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 21 recites the broad recitation "at least one fluid slot" in line 11, and the claim also recites "said fluid slots" in line 16 which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, 8 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harper.

Harper discloses all the claimed limitations except a plurality of isolation and flow direction control (IFDC) plates.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ an additional IFDC plate, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

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Regarding claims 6 and 14, the slot 38 of Harper is believed sized to permit a suitable flow of hydraulic fluid to be cooled by the air.

Claims 5, 17-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harper in view of Maniscalco.

The device of Harper lacks a U-shaped tube bundle.

Maniscalco discloses a heat exchanger comprising a shell 6 having an inlet 14 and outlet 15; a tube side inlet 28 and outlet 29; and a plurality of IFDC plates 10; wherein the tubes 20 form a plurality of U-shaped bundles for the purpose of increasing the residence time and heat exchange of the tube side fluid.

Since Harper and Maniscalco are both from the same field of endeavor and/or analogous art, the purpose disclosed by Maniscalco would have been recognized in the pertinent art of Harper.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Harper a U-shaped tube bundle for the purpose of increasing the residence time and heat exchange of the tube side fluid as recognized by Maniscalco.

Regarding claims 17-18 and 20, Figure 3 of Maniscalco discloses a plurality of slots 12 in IFDC plate 10 of varying cross-section.

Claims 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harper in view of Applicants' admission (page 3, paragraph 11).

The device of Harper lacks a turbine environment.

Applicants' admission discloses it is well known in the art to employ a turbine connected in series to the shell side outlet of a heat exchanger.

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Since Harper and Applicants' admission are both from the same field of endeavor and/or analogous art, the purpose disclosed by Applicants' admission would have been recognized in the pertinent art of Harper.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Harper a turbine connected in series to the shell side outlet of the heat exchange for the purpose of utility in a turbine environment as recognized by Applicants' admission.

Response to Arguments

The anticipatory rejections in view of Halleck, Maniscalco and Harper are withdrawn.

However, it would have been obvious to one of ordinary skill in the art to employ in Harper an additional IFDC plate for the purpose of increasing the residence time and heat exchange of the shell side fluid.

The secondary reference of Maniscalco teaches one of ordinary skill in the art to employ a U-shaped tube bundle for the purpose of increasing the residence time and heat exchange of the tube side fluid. Maniscalco discloses a plurality of slots in the IFDC plate.

Conclusion

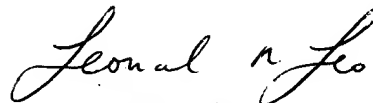
Any inquiry of a general nature, relating to the status of this application or clerical nature (i.e. missing or incomplete references, missing or incomplete Office actions or forms) should be directed to the Technology Center 3700 Customer Service whose telephone number is (703) 306-5648.

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Any inquiry concerning this Office action should be directed to Leonard R. Leo whose telephone number is (703) 308-2611.



LEONARD R. LEO
PRIMARY EXAMINER
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March 9, 2003